Installation field guide

PREFINISHED ENGINEERED HARDWOOD

Plan the job site, prepare the subfloor, and follow the method approved for your flooring. Use this guide with the original technical instructions. Confirm job-site temperature requirements and any unclear fastener dimensions with the supplier before installation.

01 Choose an installation method

The source guide covers mechanical cleats, floating with edge glue, and full-spread glue-down. Confirm the method for your product and subfloor before starting. The guide lists red oak, white oak, maple and hickory, random lengths, ¾ in. thickness, and widths from 5 in. through 10 in.

02 Get the room ready

The building should be closed in with all outside doors and windows in place. All concrete, masonry,

framing members, drywall, paint and other “wet” work should be dry. The wall coverings should be

in place and the painting should be complete except for the final coat on the base molding. When possible, delay installation of base molding until flooring installation is completed. Basement and crawl spaces must be dry and well ventilated.

Exterior grading should be complete with surface drainage offering a minimum drop of 3” in 10’(8 cm in 3 m) to direct flow of water away from the structure. All gutters and downspouts should be in

place.

the flooring may be installed below, on or above grade level. Do not install in full bathrooms. Crawl spaces must be a minimum of 18” (45cm) from the ground to underside of the joists. A

ground cover 6-10 mil black polyethylene film is essential as a vapour barrier with joints lapped six

inches (15cm) and taped. The crawl space should have perimeter venting equal to a minimum of 1.5% of the crawl space square footage. These vents should be properly located to foster cross ventilation. When necessary, local regulations prevail.

Permanent air conditioning and heating systems must be in place and operational. The installation

site should have a consistent room temperature of 65-80 (16-24) and humidity of 35-55% for 14 days prior, during and until occupied.

03 Check the surface beneath the floor

LEVEL/FLAT: Within 3/16” in 10’ (5mm in 3m) and/or 1/8” in 6’ (3mm in 2m). Sand high areas or joints. If the floor is to be glued down, fill low areas with a latex cementation leveling compound of 3000-PSI (20000 k pa) minimum cementation strength.

Follow the instructions of the leveling compound manufacturer but make certain that the leveling compounds are completely DRY before beginning installation. When nailing the floor down, flatten low spots with layers of #15 builders felt, plywood or shims (not leveling compounds). Leveling materials must provide a structurally sound subfloor that does not affect the holding power of the fastener.

DRY: Check moisture content of the subfloor with the appropriate moisture test.

STRUCTURALLY SOUND: Nail or screw any areas that are loose or squeak. Wood panels should exhibit an adequate fastening pattern, glued/screwed or nailed as system requires using an acceptable nailing pattern. Typical: 6” (15cm) along bearing edges and 12” (30cm) along intermediate supports. Flatten edge swell as necessary. Replace any water-damaged, swollen or delaminated subflooring or underlayment.

Installer note: Avoid subfloors with excessive vertical movement. Optimum performance of

hardwood floor covering products occurs when there is little horizontal or vertical movement of the

Sub-floor. If the subfloor has excessive vertical movement (deflection) before installation of the

flooring it is likely it will do so after installation of the flooring is complete.

04 Inspect the boards and plan the order

Hardwood floor is made by natural woods, therefore, not perfect. Our hardwood floors are

manufactured in accordance with accepted industry standards, which permit grading deficiencies

not to exceed 5%. These grading deficiencies may be of a manufacturing or natural type. When

flooring is ordered, 5% must be added to the actual square footage needed for cutting and grading

allowance (10% for diagonal installations).

The owner/installer assumes all responsibility for final inspection of product quality. Inspection of all

flooring should be done prior to installation. Carefully examine flooring for colour, finish and quality

before installing it. If material is not acceptable, do not install it and contact the seller immediately.

Prior to installation of any hardwood flooring product, the owner/installer must determine that the

job-site environment and the sub-surfaces involved meet or exceed all applicable standards.

Recommendations of the construction and materials industries, as well as local codes, must be

followed. These instructions recommend that the construction and subfloor be clean, dry, stiff,

structurally sound and flat. The manufacturer declines any responsibility for job failure resulting

from, or associated with, subfloor and substrates or job-site environmental deficiencies.

Use of stain, filler or putty stick for touch-up and appropriate products for correcting minor voids is

accepted as part of normal installation procedures.

05 Let the wood adjust to the room

Acclimation is the process of adjusting the moisture content of wood flooring to the environmental

conditions in which it will be used and which are typically expected for the environment. Because environmental conditions vary from region to region and job site to job site, judgement and discretion are required on the part of the installer to determine appropriate acclimation requirements for each job and treat the material accordingly.

Required interior conditions for hardwood flooring are temperature of 60 - 80F (15 - 26 C) and relative humidity of 35% RH to 55% RH. When these conditions have been established at the job site, material may be delivered to the site. Do not deliver flooring to job site if climate conditions have not been met and maintained as described above otherwise damage to product may result.

While acclimation is concerned with the moisture content of the flooring, it is also important that the flooring material be in the same temperature range as the installation site. Flooring that has been warehoused or transported in very cold conditions may need to be allowed to come to room temperature on site prior to installation commencing.

When flooring has been delivered to the job site, leave space between the cartons and leave the boxes closed until ready to commence the installation, and then open only as needed.

All wood flooring must be tested for moisture content prior to installation to ensure moisture content is within allowable limits. When ready to commence installation, open several boxes of product and test and record moisture content of the flooring using a reliable and accurate moisture

testing device. Wood flooring should have a moisture content between 6% MC and 9 % MC or as expected for the environment in which the flooring will be used. If the moisture content is not within

this range, allow the flooring to acclimate at the climate controlled job site until the moisture

content comes to within the acceptable range.

Once installed, any board is considered as having been accepted by the installer and owner.

06 Prepare wood and concrete subfloors

The installer is responsible for ensuring that the subfloor is suitable for the flooring application and properly prepared for installation.

All subfloors must be flat, clean, dry, structurally sound, and free of squeaks and protruding fasteners. The subfloor must be flat to within 3/16” over 10 feet, or 1/8” in 6 feet radius.

PLYWOOD or OSB subfloors must meet local building code requirements. (US: minimum 3/4” T&G Exposure 1 rated plywood or 23/32” T&G Exposure 1 rated OSB. Canada: minimum 5/8” T&G Exposure 1 rated plywood or 23/32” T&G Exposure 1 rated OSB installed over joists 16” on center or less.) They must be secure to the joists, free of squeaks and protruding fasteners.

SOLID WOOD SUBFLOORS: Minimum 3/4″ (19 mm) thick with a maximum width of 6″ (15 cm) installed at a 45° angle to the floor joists. Group 1 dense softwood (Pine, Larch, Douglas Fir, etc.) No. 2 common, kiln dried with all board ends bearing on joists. For glue down applications add 3/8″ (9.5 mm) approved underlayment.

Sub-floor moisture content must not exceed 12%, and the variance in moisture content between the subfloor and the flooring boards must not exceed 3 percentage points.

Concrete subfloors must be dry, clean and free of non-compatible sealers, waxes, oil, paint, drywall compound, or other bond-breaking substances. (Check for the presence of sealers by applying drops of water to the slab. If the water beads up, there may be sealers or oils.)

All slabs must be tested for moisture content using test method ASTM F2170-11 or equivalent and must return a reading of 75% relative humidity or less.

07 Lay out the floor before installing

IMPORTANT! Per 3M: ScotchBlue Painter’s Tape Original Multi-Surface 2090 is not recommended for use on pre-finished flooring. The only adhesive tape which should be used the flooring is ScotchBlue Painter’s Tape Delicate Surface 2080.

Traditional “Blue Tape” contains chemical solvents that, over time, may penetrate and weaken the finish. Do not use “Blue Tape”. Even when using ScotchBlue Painter’s Tape Delicate Surface 2080, do not leave tape on flooring for longer than 24 hrs. When possible, apply tape to baseboards or walls rather than flooring.

Undercut Door Casings - Undercut all door casings 1/16" higher than the thickness of the flooring being installed. To do this, use a scrap piece of flooring as a guide. Lay it on the substrate and cut the casing with a handsaw or use a power jamb saw set at the correct height.

Blending of Cartons- To achieve a uniform appearance across the entire floor, we highly recommend that you open and work from several cartons at a time and dry-lay the flooring, mixing the planks from several cartons. This will allow you to blend the planks for maximum aesthetic appearance. Make certain the room is well lit to ensure colour is consistent and that any visual defects can be seen and removed.

Match Transition Moldings: For best appearance, blend all transitions and mouldings to planks that

have similar colour and graining. Set them aside for use as needed.

Layout of Flooring: “Racking the Floor” is essential to achieve a random appearance. Start by either using random-length planks found in the carton or by cutting four or five planks in random lengths, differing by at least six inches. As you continue working across the floor try to maintain a six-inch minimum between end joints.

Randomly install different lengths to avoid a patterned appearance.

Never waste materials; the end cuts from starter rows should be used at the opposite side of the room to complete rows or used to start the next row.

Expansion Space: Allow a minimum 1/2” expansion space around all vertical obstructions. Also

leave expansion space where the flooring will meet any vertical obstruction, such as stairs, pipes, door sills, tiles, cabinets etc. Do not install kitchen base-cabinets directly on top of hardwood.

08 Full-spread glue-down

(We strongly recommend this installation method be performed by a specially trained hardwood installer)

Adhesive and Moisture Barrier Systems from the following manufacturers are permitted for the full-spread glue-down installation of the flooring:

Bostik * Sika * Mapei * Franklin * Fortane

Follow the Adhesive Manufacturer’s Installation Instructions. Test for subfloor moisture content. Choose an adhesive and (if necessary) moisture barrier system that is warranted by the adhesive manufacturer for installation under those circumstances.

the flooring will not be responsible for problems that might arise due to moisture transference from

a subfloor to the hardwood flooring.

Spread sufficient amounts of the recommended adhesive with the recommended trowel in an area

that can be covered in the time indicated by the adhesive manufacturer. If necessary, nail a sacrificial row with 1″ (2.5 cm) nails on the dry side of your chalk line to help hold the first row in place.

Installer note: Avoid installing on the surface of the flooring. If necessary, distribute weight using a

kneeler board.

Use the longest, straightest boards available for the first two rows. For random and alternate width

products, use the widest plank for the first row. The first row of planks should be installed with the edge of the groove lined up on the chalk line. The tongue should be facing the starting wall. The

first row must be aligned and seated in the adhesive, as all additional rows will be pushed back to this original row. Remove tongue to allow for expansion space, if necessary, on the row adjoining the wall.

When installing products wider than 8 cm (inch figure unclear in source), apply a bead of recommended wood glue to all of the end grooves prior to installing into the adhesive. When installing pieces, engage the end-joint first, as close to the side (long) tongue and groove as possible, then slide together tightly to engage the side (long) joint tongue and groove. To avoid adhesive bleed-through and memory pull-back, avoid sliding pieces through the adhesive as much as possible when placing them in position.

During the installation occasionally remove a piece of flooring from the subfloor and inspect the back for proper adhesive transfer. Adequate adhesive transfer is necessary to ensure sufficient holding strength. If the adhesive skins over and fails to transfer, remove and spread new adhesive to achieve proper bonding.

Installer note: Clean adhesive from the surface of the floor frequently, using the recommended adhesive cleaner.

Urethane adhesives become extremely difficult to remove when cured. Do not use 3M ScotchBlue 2080 Tape before adhesive is removed from the surface. Use clean towels, changed frequently, to prevent haze and adhesive residue. Check for a tight fit between all edges and ends of each plank.

End-joints of adjacent rows should be staggered 4″-6″ (10-15 cm) when possible, to ensure a more favorable overall appearance.

It’s necessary to align the product with a cut-off piece of scrap.

To eliminate minor shifting or gaping of product during installation, use 3M ScotchBlue 2080 Tape to hold the planks together. After installation is complete, remove all of the 3M ScotchBlue 2080

Tape from the surface of the newly installed flooring.

Do not let the tape remain on the flooring longer than 24 hours. Avoid the use of masking or duct tape, which leaves an adhesive residue and may damage the finish. If necessary, use weights to flatten boards with bows until adhesive cures, in order to prevent hollow spots. Boards that cannot

be flattened should be cut in length to reduce the bow, or not used.

Be sure not to spread adhesive too far ahead of your work area.

Complete the installation using this same technique for the remainder of the floor.

Avoid heavy foot traffic on the floor for at least 24 hours. Lift the furniture or fixtures back into place after 24 hours.

09 Floating with edge glue

Floating floors can be installed over any structurally sound surface that meets or exceeds local building codes. Any width of flooring can be installed in this manner but wider widths are preferred.

Plan the floor layout (in width) to avoid having to rip the last row narrower than 1″ (2.5 cm). This may require ripping the first row to assure the last row is at least the minimum width.

Allow 1/2″ (13 mm) expansion around all vertical obstructions.

Install the underlayment in the same direction the hardwood flooring is to be installed.

Extend the underlayment a few inches up the wall.

Trim excess prior to installing trim or mouldings.

The floating floor underlayment already has double-sided tape for ease of taping the precut overlapping seams. If a non-adhesive underlayment is used, tape all seams with the included tape.

The first row of flooring can be installed using one of two methods after the layout has been completed Allow 1/2″ (13 mm) expansion.

Method 1 - Sacrificial board: If the wall is not straight, scribe the first board as necessary to maintain alignment with the chalk line. Install a sacrificial board (with a straight edge) using the appropriate fasteners for the subfloor. If a board is used for the starter row make certain the groove faces the wall.

Method 2 - Wedges: Align the first row with the wall using wedges to maintain a 1/2″ (13 mm) expansion in place and to stabilize the product. If the wall is not straight, scribe the first board as necessary to maintain alignment with the chalk line.

Select the first board. All installations should begin with the groove side against the wall using the longest boards available. Apply a continuous 1/8″ (3 mm) glue bead to the inside bottom of the groove on the end of the board. Do not apply glue to the groove side at this time. Products with the

end tongue on the left should be installed right to left, opposite tongues should be left to right. If a

sacrificial board was used Do not glue the first row to it.

Complete the first row. Cut the last board allowing for 1/2″ (13 mm) clearance between the wall and

the floor. (Use the remaining end of the cut board as a starter board for any row following row three). Install a wedge on the end of the board between the hardwood flooring and the wall, allowing 1/2″ (13 mm) expansion space. Avoid installation of any boards shorter than 16″ (40.6 cm)

in the first four rows.

Use a pull bar to pull the last board into place from the opposite end. Install wedges into the gap and tighten.

If any glue gets on the surface of the flooring, wipe off immediately with a clean damp cloth.

Cut or use a shorter board for the first board of the second row. Start the second row by applying a

1/8″ (3 mm) bead along the inside bottom of the end and side groove of the new board.

Install the first board of row two. Apply a bead of glue to the inside bottom of the end and side groove of the next board and install. When installing boards together, use a tapping block against the tongue, not the groove.

Tap the boards into place by tapping with a hammer on the tapping block. Do not tap on the edge directly with the hammer. Complete the second through fourth rows using this technique. Insert wedges on the ends, as necessary, to restrain the movement of the floor.

In the remaining rows, stagger joints 4″-6″ (10-15 cm) apart. Install the rest of the floor. Be sure all joints are tight. Use spacers on the long and butt walls. Use a tapping bar to tighten the joints from the ends.

10 Fastening with cleats

Nail down installation requires three different nailing systems:

A pneumatic or manual nailer

A pneumatic finish nailer

A brad nailer for top-nailing

Check nail gun to make sure the depth is set for the appropriate thickness of the flooring. Ensure the nailer is not scratching the floor surface. Test nail a piece of scrap to make sure the nailer is correctly set up, and that the fasteners are being properly positioned and set. Pneumatic nailer air pressure should be adjusted adequately for each species of hardwood floor being installed and checked regularly so that the cleats are seated properly in the nailing channel to avoid dimpling.

Fastening schedule: Use 16-gauge, 2-inch cleats, spaced 4–6 inches apart and 1–2 inches from the ends.

COMMENTS

Glue Assist (Recommended)

Ensure plywood subfloor is suitable and properly prepared. Verify moisture content of both subfloor

and flooring is within allowable limits before starting installation. Open several packages of flooring

and rack and inspect boards. If the installation is over an unfinished crawlspace, basement or

exterior space, a vapour retarder must be used. Before proceeding, place a vapour retarder

(IRC-rated Perm Class 2 or 3, permeance rating 0.7 – 1.0) over the subfloor. the flooring

recommends Aquabar-B or equivalent. Wax paper is not an approved vapour retarder. Install

according to underlay manufacturer’s instructions. Set the first row in place. If required, snap a

chalk guideline on the surface of the vapour retarder to act as a guide. If starting the installation

against a wall, place boards with the groove side facing the wall and remember to allow expansion

space.

Top nail along the groove edge with the brad nailer using minimum 18g fasteners (verify length

with supplier) set 10 to 12” apart, with a fastener 1 to 3” from each end of each board. Keep the

nailer perpendicular to the direction of the flooring and set nails no less 1/4” in from the edge of the

board.

Using a pneumatic finish nailer, blind-nail the boards along the tongue edge at a 45° angle. Follow

the nailing schedule specified above, spacing the recommended fasteners as indicated. Ensure a

fastener is placed as indicated near the end of each board.

At the end of the row, cut a board to fit, allowing 1/2” expansion space.

Installer note: It is a common practice among some installers to use the “full spread glue down” on

the first and last few rows of a nail down installation in order to avoid top nailing.

Nail down installation of wide plank solid and wide plank engineered flooring requires additional

bonding to the subfloor to prevent movement and squeaks. This is done by introducing glue to the

nailing process. The installation method recommended is not a full glue down installation, but only

a bead of glue across the width of the board. This is recommended on all wide plank solid and

engineered floors 5” and wider, installed on a plywood or OSB subfloor.

Failure to follow instructions for ‘glue assist’ may result in squeaking and/or other objectionable

floor noise. Such noise is not the result of a product defect and is not covered by the product

warranty.

This practice is not recommended by the flooring for any nail down installation.

Any use of full spread glue down on first and/or last rows within a nail down installation will

automatically void the product warranty.

Set the second row in place and set the tongue and groove joints. Use off-cuts if lengths are

suitable and stagger end joints as required. Apply glue (recommended) to the butt-joints. Blind nail

along the tongue as before or, if working space permits, use the nail gun.

Continue with subsequent rows using the spacing guidelines outlined on the previous page. To

avoid a repetitive or predictable board patterns, cut some boards to random lengths to begin rows.

Open new packages several at a time and rack and inspect boards as described above. Ensure 1/2”

expansion space is maintained at all perimeter walls and other vertical obstacles. Maintain nailing

schedule and keep butt joints staggered as described above. Continue to applying glue

(recommended) to the butt-joint to help eliminated end-gaping.

In the last couple of rows, there may not be space to use the nail gun, so revert to using the finish

nailer as before, blind nailing through the tongue. For the final row, measure the gap to the wall,

allowing expansion space, and rip a row of boards to the required width. Top nail the final row into

place using brads or finishing nails placed 1/4” in from the edge. Install mouldings and transitions as required.

Clean the floor and then perform any required touch-ups with the appropriate coloured putties, touch-up markers and acrylic fillers, so that once completed the floor passes inspection from a standing position.

GOING FORWARD when maintaining the floor, the homeowner should only use an approved cleaner

applied in the proper manner. For a list of these, please see our maintenance and warranty instructions.

Floating installation guidelines

SUPPLIED VISUAL REFERENCE

Read with the complete floating-with-edge-glue procedure in Section 09.

These excerpts supplement that procedure and continue across the reference pages.

FLOATING INSTALLATION GUIDELINES

Floating floors can be installed over any structurally sound surface that meets or exceeds local building codes. Any width of flooring can be installed in this manner but wider widths are preferred.

- Plan the floor layout (in width) to avoid having to rip the last row narrower than 1″ (2.5 cm). This may require ripping the first row to assure the last row is at least the minimum width.
- Allow 1/2″ (13 mm) expansion around all vertical obstructions.
- Install the underlayment in the same direction the hardwood flooring is to be installed.
- Extend the underlayment a few inches up the wall.

Floating installation guidelines

SUPPLIED VISUAL REFERENCE

Read with the complete floating-with-edge-glue procedure in Section 09.
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- Trim excess prior to installing trim or moldings.
- The floating floor underlayment already has double-sided tape for ease of taping the precut overlapping seams. If a non-adhesive underlayment is used, tape all seams with the included tape.
- The first row of flooring can be installed using one of two methods after the layout has been completed Allow 1/2″ (13 mm) expansion.

Method 1 - Sacrificial board: If the wall is not straight, scribe the first board as necessary to

maintain alignment with the chalk line. Install a sacrificial board (with a straight edge) using the

appropriate fasteners for the sub-floor. If a board is used for the starter row make certain the

groove faces the wall.

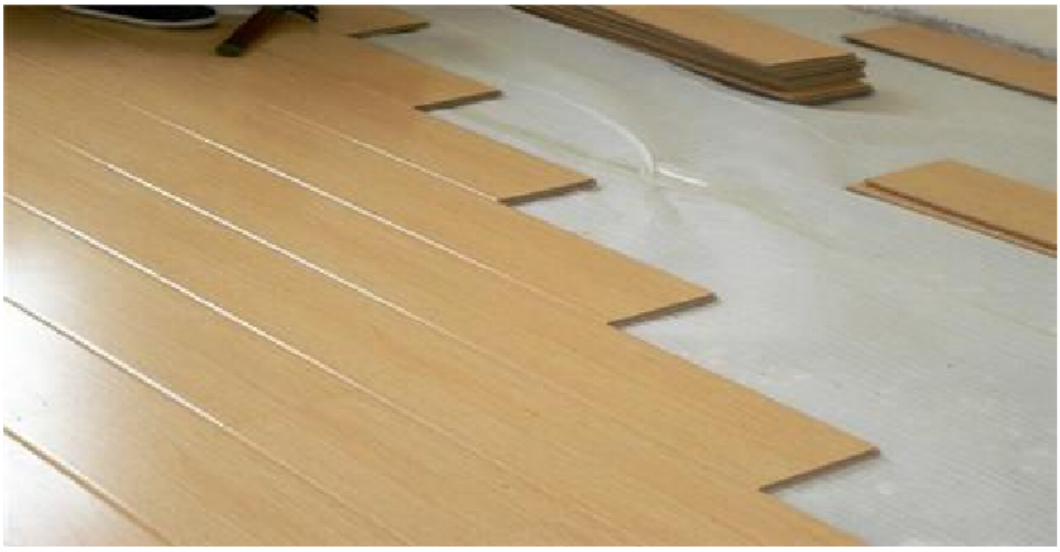
Floating installation guidelines

SUPPLIED VISUAL REFERENCE

Read with the complete floating-with-edge-glue procedure in Section 09.
These excerpts supplement that procedure and continue across the reference pages.

If any glue gets on the surface of the flooring, wipe off immediately with a clean damp cloth.

Cut or use a shorter board for the first board of the second row. Start the second row by applying a 1/8″ (3 mm) bead along the inside bottom of the end and side groove of the new board.



FLOATING INSTALLATION GUIDELINES Cont'd

Install the first board of row two. Apply a bead of glue to the inside bottom of the end and side groove of the next board and install. When installing boards together, use a tapping block against the tongue, not the groove.

Tap the boards into place by tapping with a hammer on the tapping block. DO NOT tap on the edge directly with the hammer. Complete the second through fourth rows using this technique. Insert wedges on the ends, as necessary, to restrain the movement of the